WHAT IS CLAIMED:

1. A plasma reactor comprising:

a vacuum chamber;

a chuck assembly;

a plasma source assembly; and

a holding structure constructed and arranged to hold said chuck assembly and said plasma source assembly,

wherein said holding structure at least partially constitutes a wall of said vacuum chamber.

2. A plasma reactor as recited in claim 1, wherein said plasma source assembly is a capacitively coupled plasma (CCP) source assembly.

3. A plasma reactor as recited in claim 2, wherein said capacitively coupled plasma (CCP) source assembly comprises an electrode assembly constructed and arranged adjacent to the chuck assembly, said electrode assembly and said chuck assembly defining a plasma region therebetween.

4. A plasma reactor as recited in claim 1, wherein said plasma source assembly is an inductively coupled plasma (ICP) source assembly.

5. A plasma reactor as recited in claim 4, wherein said inductively coupled plasma source assembly comprises an inductive coil.

6. A plasma reactor as recited in claim 5, wherein said inductive coil is wound in a spiral configuration proximate said chuck assembly.

7. A plasma reactor as recited in claim 1, wherein said plasma source assembly is an electrostatically shielded radio frequency (ESRF) plasma source assembly.

8. A plasma reactor as recited in claim 7, wherein said electrostatically shielded radio frequency (ESRF) plasma source assembly comprises a coil provided in the vicinity of a said chuck assembly.

9. A plasma reactor as recited in claim 1, further comprising a RF source impedance match network held by said holding structure.

10. A plasma reactor as recited in claim 9, wherein said RF source impedance match network is electrically coupled to said plasma source assembly.

11. A plasma reactor as recited in claim 1, further comprising a chuck impedance match network held by said holding structure.

12. A plasma reactor as recited in claim 11, wherein said chuck impedance match network is electrically coupled to said chuck assembly.

13. A plasma reactor as recited in claim 1, further comprising:

a utility via assembly constructed and arranged to provide RF bias connection to said chuck assembly.

14. A plasma reactor as recited in claim 13, further comprising:

another utility via assembly constructed and arranged to provide utilities to said chuck assembly,

15. A plasma reactor as recited in claim 14, wherein said utilities include cooling systems and temperature regulating systems.

16. A plasma reactor as recited in claim 1, wherein said plasma source assembly and said chuck assembly are electrically insulated with insulators.

17. A plasma reactor as recited in claim 16, wherein said insulators comprise a material selected from the group consisting of Rexolite, alumina, quartz, Teflon, and ceramics.

18. A plasma reactor as recited in claim 1, further comprising:

a gas supply system in communication with said plasma vacuum chamber, said gas supply system being constructed and arranged to supply a gas into said plasma vacuum chamber.

19. A plasma reactor as recited in claim 18, wherein said gas includes at least one of hydrogen-bromide, octafluorocyclobutane, fluorocarbon compounds, silane, tungsten-tetrachloride, and titanium-tetrachloride.

20. A plasma reactor as recited in claim 1, further comprising:

a robotic system in operative communication with said plasma vacuum chamber, said robotic system being constructed and arranged to transport a workpiece to and from the chuck assembly.

21. A plasma reactor as recited in claim 20, wherein said robotic system is arranged in a robotic chamber, said robotic chamber and said vacuum chamber are isolated with a valve.

22. A plasma reactor as recited in claim 1, wherein said vacuum chamber comprises sidewalls and a chamber adapter constructed and arranged to hold a vacuum pump adapted to evacuate gases from said vacuum chamber.

23. A plasma reactor as recited in claim 22, wherein said vacuum pump is a turbo molecular pump (TMP).

24. A plasma reactor as recited in claim 22, wherein said vacuum pump is arranged symmetrically to an axis perpendicular to said chuck assembly, said axis passing through approximately a center of said chuck assembly such that pumping of said gases is symmetrical relative to said axis.

25. A plasma reactor as recited in claim 22, wherein a space around an opening in said vacuum pump and around said chuck assembly is substantially unobstructed thereby allowing pumping symmetrically.

26. A plasma reactor as recited in claim 1, further comprising:

a chamber plate constructed and arranged to inject gases in the vicinity and opposite the chuck assembly.

27. A plasma reactor as recited in claim 26, wherein said chamber plate is held by said holding structure.

28. A plasma reactor as recited in claim 1, wherein said chuck assembly is constructed and arranged to hold a workpiece.

29. A plasma reactor as recited in claim 1, wherein said holding structure is constructed and arranged to pivot around a pivot point relative to a wall of said process chamber.

30. A plasma reactor as recited in claim 1, wherein said holding structure is constructed and arranged to pivot around a pivot axis parallel to a surface of said holding structure.

31. A method of accessing a chuck assembly and a plasma source assembly in a plasma reactor, the chuck assembly and the plasma source assembly being held by a holding structure, the method comprising:

pivoting said holding structure around a pivot axis parallel to a surface of said holding structure, said holding structure constituting at least a portion of a wall of a vacuum chamber; and

opening up a volume space in said vacuum chamber.

32. A method as recited in claim 31, wherein said pivoting said holding structure comprises pivoting said chuck assembly and said plasma source assembly as one assembly.

33. A method as recited in claim 31, further comprising:

inspecting said chuck assembly and said plasma source assembly.